SPA CONTROL SYSTEM

This application is a continuation of U.S. Patent Application Serial No. 08/327,927 filed October 24, 1994, now US Pat. 5,559,720, which was a continuation of U.S. Patent Application Serial No. 08/225,282 filed January 11, 1994, now US Pat-5,361,215, which was a continuation of U.S. Patent Application Serial No. 07/224,869 filed July 26, 1988, now abandoned, which was a continuation-in-part of U.S. Patent Application Serial No. ~~054,581~~ 07/054,581, filed May 27, 1987, now ~~U.S. Patent 5,550,753~~ abandoned, each of the above related applications and patent being incorporated herein by reference.

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FIELD OF THE INVENTION

This invention relates to the development of a spa control system. More particularly, this invention relates to a spa control system which uses an interconnection panel and a control panel to effectively control various operating functions of the spa.

BACKGROUND OF THE INVENTION

The design of systems to control spas is complicated by the environment of the spa. Typically, spa control systems contain heating elements, controls, switches, and wiring harnesses which deteriorate when exposed to moisture or extreme levels of humidity and a hostile chemical environment. Since the chemically treated, heated water of the spa raises the humidity level and produces corrosive gases, the atmosphere surrounding the controls of the spa unit is inherently corrosive to spa control systems.

The accuracy of the temperature of the spa water is essential to the safety and comfort of the spa user. This temperature is difficult to accurately control, since the temperature of the water can vary rapidly depending on the number of spa users, the ambient temperature of the air, and other environmental factors. To conserve energy, the spa temperature is customarily raised to the desired level shortly before the expected use of the spa, and is not maintained at a constant temperature when the spa is unattended. Depending on the use of the spa, the temperature of the spa water may be cycled several times per day. During these cycles, the control of the water temperature is difficult to maintain without overheating or underheating the water. Typically, a spa control system merely heats the water with a heating